

Indoor Distribution Test Report

Spectrum Lighting Inc.

994 Jefferson Street
Fall River, MA 02721
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Spectrum Lighting Photometric Lab

Luminaire

SGE12BX 70L 35K WD DO101 AR12BX SG WF
Nom. 12" Diam x 10" H open aperture

Test Number

SP-00686_6_M-70L

Test Date

The results contained in this report pertain only to this IES file.

Summary of Results

Power

Input Watts	51 W
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Lumen Output

Output Lumens	5495
Efficacy	107.75 lm/W

Luminous Dimensions

0° - 180° Size	-0.97
90° - 270° Size	-0.97
Height	0

Spacing Criterion

Two luminaires, plane 0°	0.89
Two luminaires, plane 90°	0.91
Four luminaires	0.9

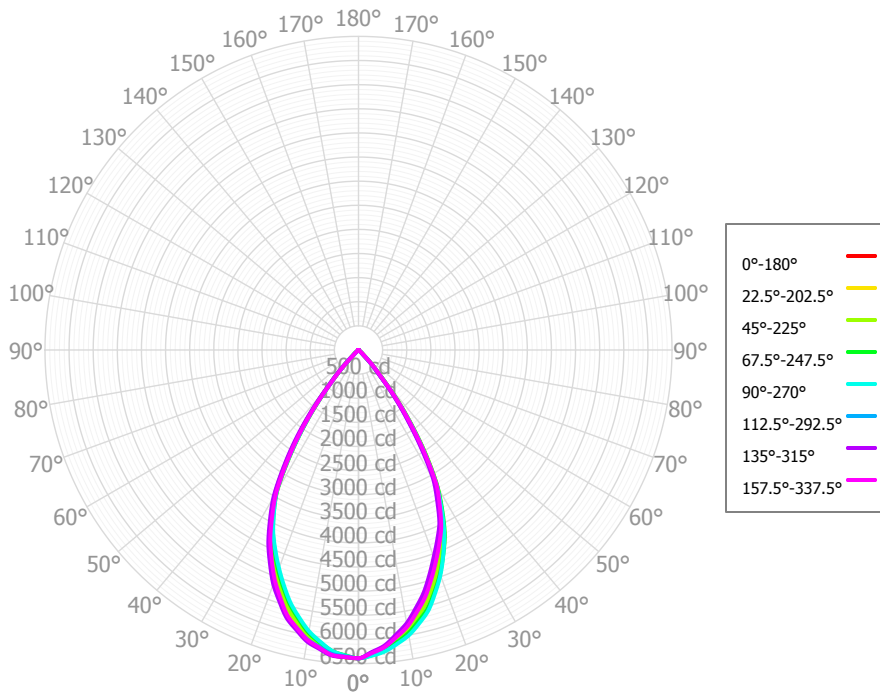
Full Beam Angle

0° - 180°	61°
90° - 270°	61°

IES File Header Contents

Keyword	Value
TEST	SP-00686_6_M-70L
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
ISSUEDATE	6/7/2018
UPDATE	9/27/2019
LUMCAT	SGE12BX 70L 35K WD DO101 AR12BX SG WF
LUMINAIRE	Nom. 12" Diam x 10" H open aperture
OTHER	Semi-diffuse clear anodized alum. reflector trim
OTHER	Deep regressed retrofit high output LED downlight
OTHER	BX Series, Wide Beam
OTHER	60.5 Deg Beam Angle
LAMPCAT	N/A
LAMP	N/A, Bridgelux Vero 29
OTHER	Dimmable driver tested at 100% output
OTHER	Tested CCT: 3500K
OTHER	CCT Output: 27K x 0.932, 30K x 1.00, 40K x 1.01
OTHER	Total luminaire wattage is approximate
OTHER	This report prepared by Spectrum Lighting, scaled from 80L

Candela Polar Plot



Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	595.20	10.83%	90.00° - 100.00°	0.09	0.00%
10.00° - 20.00°	1,530.18	27.84%	100.00° - 110.00°	0.00	0.00%
20.00° - 30.00°	1,900.22	34.58%	100.00° - 120.00°	0.00	0.00%
30.00° - 40.00°	1,251.60	22.78%	120.00° - 130.00°	0.00	0.00%
40.00° - 50.00°	209.34	3.81%	130.00° - 140.00°	0.00	0.00%
50.00° - 60.00°	6.07	0.11%	140.00° - 150.00°	0.00	0.00%
60.00° - 70.00°	1.12	0.02%	150.00° - 160.00°	0.00	0.00%
70.00° - 80.00°	0.81	0.01%	160.00° - 170.00°	0.00	0.00%
80.00° - 90.00°	0.80	0.01%	170.00° - 180.00°	0.00	0.00%
0.00° - 90.00°	5,495.32	100.00%	0.00° - 180.00°	5,495.41	100.00%

Candela Distribution

	0.00°	22.50°	45.00°	67.50°	90.00°	112.50°	135.00°	157.50°	180.00°	202.50°	225.00°	247.50°	270.00°	292.50°	315.00°	337.50°	360.00°
0.00°	6,391.31	6,391.31	6,391.31	6,391.31	6,391.31	6,391.31	6,391.31	6,391.31	6,391.31	6,391.31	6,391.31	6,391.31	6,391.31	6,391.31	6,391.31	6,391.31	6,391.31
2.50°	6,288.01	6,309.01	6,303.87	6,335.53	6,343.39	6,358.74	6,370.70	6,369.64	6,374.73	6,359.38	6,362.91	6,336.69	6,342.94	6,286.46	6,268.97	6,290.22	6,288.01
5.00°	6,172.29	6,202.83	6,204.17	6,254.76	6,273.19	6,325.89	6,357.42	6,344.80	6,346.26	6,309.54	6,307.03	6,264.46	6,261.96	6,181.09	6,153.56	6,184.94	6,172.29
7.50°	5,998.87	6,046.63	6,048.38	6,113.85	6,145.07	6,210.44	6,248.01	6,224.96	6,222.83	6,181.38	6,175.73	6,114.30	6,097.45	5,990.29	5,953.67	6,006.25	5,998.87
10.00°	5,824.40	5,873.69	5,877.82	5,961.72	6,006.75	6,094.80	6,137.66	6,100.91	6,097.89	6,033.36	6,019.66	5,950.63	5,918.97	5,799.14	5,753.14	5,823.70	5,824.40
12.50°	5,581.52	5,654.18	5,663.28	5,757.95	5,807.77	5,909.80	5,945.89	5,902.85	5,892.40	5,827.20	5,806.79	5,716.70	5,680.98	5,531.55	5,483.97	5,572.20	5,581.52
15.00°	5,337.57	5,419.29	5,426.83	5,544.46	5,592.61	5,724.70	5,753.07	5,698.47	5,684.82	5,595.35	5,575.15	5,471.86	5,433.23	5,263.78	5,214.22	5,317.00	5,337.57
17.50°	5,033.89	5,127.61	5,125.95	5,250.46	5,283.07	5,425.71	5,460.27	5,388.11	5,378.88	5,287.89	5,291.08	5,169.87	5,129.85	4,947.01	4,888.42	5,000.19	5,033.89
20.00°	4,729.23	4,817.07	4,819.82	4,941.59	4,964.41	5,126.47	5,166.46	5,074.42	5,071.79	4,972.87	4,989.94	4,863.52	4,817.27	4,630.35	4,562.29	4,680.24	4,729.23
22.50°	4,401.84	4,490.51	4,498.14	4,591.79	4,593.60	4,753.16	4,794.85	4,703.91	4,717.06	4,635.91	4,659.57	4,534.71	4,501.01	4,329.55	4,265.60	4,368.88	4,401.84
25.00°	4,074.13	4,158.69	4,142.72	4,234.58	4,207.42	4,379.35	4,422.05	4,328.45	4,360.43	4,278.36	4,319.64	4,196.27	4,184.15	4,028.15	3,969.01	4,057.95	4,074.13
27.50°	3,639.94	3,729.05	3,688.79	3,765.39	3,732.68	3,919.65	3,973.75	3,872.07	3,920.55	3,860.66	3,906.89	3,809.13	3,796.67	3,608.17	3,539.02	3,652.21	3,639.94
30.00°	3,204.53	3,267.80	3,184.48	3,275.77	3,231.17	3,459.07	3,523.02	3,405.27	3,475.84	3,386.03	3,470.62	3,378.69	3,397.98	3,186.36	3,108.42	3,241.80	3,204.53
32.50°	2,538.07	2,649.70	2,534.98	2,642.24	2,578.33	2,820.26	2,906.28	2,775.98	2,840.91	2,747.32	2,861.52	2,727.75	2,773.43	2,521.77	2,442.99	2,589.36	2,538.07
35.00°	1,868.71	1,980.65	1,893.86	1,982.96	1,928.93	2,181.44	2,288.89	2,145.50	2,205.63	2,108.49	2,197.32	2,081.13	2,112.75	1,857.72	1,777.09	1,924.75	1,868.71
37.50°	1,291.22	1,381.59	1,277.01	1,371.22	1,299.17	1,543.35	1,633.63	1,496.08	1,556.15	1,469.30	1,570.92	1,456.11	1,503.32	1,276.22	1,208.34	1,333.33	1,291.22
40.00°	714.64	804.98	733.55	768.05	715.62	906.89	982.30	863.92	913.73	890.65	956.63	872.62	901.92	697.42	639.88	745.39	714.64
42.50°	424.21	459.07	399.93	438.06	390.28	521.87	574.82	493.90	532.94	485.08	554.91	498.33	536.14	417.65	385.60	449.69	424.21
45.00°	136.93	187.51	135.29	156.39	107.48	139.74	173.44	142.42	161.00	164.37	220.41	173.33	207.58	140.40	131.88	167.11	136.93
47.50°	75.91	81.16	68.92	71.62	57.92	79.28	97.67	77.32	88.43	83.17	92.99	92.17	102.30	80.58	73.90	88.39	75.91
50.00°	16.82	27.34	17.61	21.00	15.04	19.41	23.27	15.94	17.67	20.64	31.41	23.04	31.55	21.29	15.97	19.04	16.82
52.50°	9.95	9.83	9.04	9.16	9.02	10.71	13.03	9.58	10.18	11.04	11.73	12.44	14.08	12.20	9.25	9.80	9.95
55.00°	3.59	3.72	2.56	4.10	3.70	2.10	2.98	3.56	2.90	3.62	5.20	3.48	4.92	3.21	2.56	3.16	3.59
57.50°	2.71	2.01	2.02	2.50	2.23	1.91	2.46	2.67	2.40	2.28	2.62	2.58	3.10	2.35	2.25	2.35	2.71
60.00°	1.87	1.70	1.54	1.50	1.00	1.72	1.95	1.81	1.91	1.32	1.28	1.77	2.41	1.50	1.94	1.79	1.87
62.50°	1.38	1.31	1.21	1.27	1.02	1.59	1.69	1.27	1.45	1.41	0.85	1.40	1.94	1.03	1.57	1.26	1.38
65.00°	0.88	0.89	0.96	1.17	1.03	1.45	1.44	0.76	0.99	1.37	0.71	1.07	1.52	0.57	1.19	0.73	0.88
67.50°	0.95	0.91	0.93	0.98	0.94	1.11	0.95	0.70	0.75	0.97	0.61	0.95	1.28	0.59	0.93	0.74	0.95
70.00°	0.97	1.06	0.85	0.76	0.86	0.80	0.61	0.60	0.56	0.72	0.52	0.85	1.07	0.63	0.71	0.76	0.97
72.50°	0.67	0.71	0.70	0.75	0.79	0.77	1.28	0.37	0.69	0.73	0.98	0.82	0.84	0.69	0.76	0.66	0.67
75.00°	0.51	0.45	0.69	0.75	0.81	0.72	1.44	0.37	0.76	0.85	1.34	0.74	0.64	0.85	0.70	0.61	0.51
77.50°	0.58	0.77	0.77	0.73	0.93	0.66	0.88	0.65	0.74	0.98	1.08	0.62	0.53	1.17	0.45	0.66	0.58
80.00°	0.63	0.76	0.92	0.69	0.77	0.94	0.69	0.77	0.76	0.35	0.86	0.73	0.52	1.20	0.55	0.83	0.63
82.50°	0.84	0.71	0.63	0.78	0.57	0.84	0.75	0.66	0.66	0.57	0.80	0.69	0.57	0.79	0.56	0.84	0.84
85.00°	0.81	0.85	0.64	1.02	0.49	0.62	1.09	0.61	0.74	0.75	0.65	0.55	0.68	0.68	0.49	0.78	0.81
87.50°	1.02	1.15	0.81	0.95	0.76	0.83	0.74	0.78	0.76	0.39	0.47	1.22	0.78	0.92	0.40	0.77	1.02
90.00°	0.44	0.59	0.87	0.68	0.61	0.85	0.72	0.48	0.53	0.51	0.81	0.81	0.82	0.60	0.48	0.84	0.44
92.50°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
95.00°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
97.50°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
102.50°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
105.00°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
107.50°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
110.00°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
112.50°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Coefficients of Utilization – Zonal Cavity Method

Values are lumens delivered to the workplane.

	pfc	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	0%
	pcc	80%	80%	80%	80%	70%	70%	70%	70%	50%	50%	50%	30%	30%	30%	10%	10%	0%
	pw	70%	50%	30%	10%	70%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	30%
RCR	0	6,542	6,542	6,542	6,542	6,390	6,390	6,390	6,390	6,106	6,106	6,106	5,846	5,846	5,846	5,607	5,607	5,495
	1	6,247	6,099	5,966	5,846	6,112	5,980	5,861	5,754	5,758	5,664	5,577	5,555	5,480	5,411	5,367	5,309	5,203
	2	5,949	5,689	5,474	5,294	5,829	5,595	5,400	5,234	5,418	5,258	5,120	5,255	5,125	5,010	5,104	4,999	4,901
	3	5,659	5,317	5,052	4,840	5,551	5,241	4,997	4,801	5,098	4,893	4,725	4,965	4,794	4,651	4,842	4,701	4,610
	4	5,381	4,978	4,683	4,457	5,283	4,916	4,642	4,430	4,798	4,564	4,378	4,689	4,489	4,327	4,588	4,418	4,336
	5	5,116	4,669	4,357	4,126	5,028	4,618	4,326	4,108	4,520	4,266	4,071	4,429	4,209	4,035	4,345	4,154	4,079
	6	4,865	4,387	4,067	3,837	4,785	4,344	4,043	3,823	4,262	3,996	3,797	4,186	3,951	3,772	4,115	3,908	3,746
	7	4,628	4,130	3,806	3,580	4,556	4,093	3,787	3,570	4,024	3,750	3,551	3,959	3,715	3,532	3,898	3,680	3,514
	8	4,407	3,894	3,572	3,351	4,341	3,863	3,557	3,343	3,804	3,527	3,329	3,748	3,498	3,315	3,696	3,470	3,302
	9	4,199	3,679	3,360	3,145	4,139	3,652	3,348	3,139	3,601	3,323	3,129	3,553	3,300	3,118	3,507	3,277	3,108
	10	4,005	3,481	3,168	2,959	3,950	3,458	3,157	2,955	3,413	3,137	2,947	3,371	3,118	2,939	3,332	3,099	2,930

Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	211.3 fc	6.5 ft
6.5 ft	151.3 fc	7.7 ft
7.5 ft	113.6 fc	8.9 ft
8.0 ft	99.9 fc	9.5 ft
10.0 ft	63.9 fc	11.8 ft
12.0 ft	44.4 fc	14.2 ft
14.0 ft	32.6 fc	16.5 ft
16.0 ft	25.0 fc	18.9 ft
20.0 ft	16.0 fc	23.6 ft
24.0 ft	11.1 fc	28.4 ft
28.0 ft	8.2 fc	33.1 ft

Average Luminaire Luminance [cd/m²]

	0.00°	45.00°	90.00°
0.00°	93,095	93,095	93,095
45.00°	2,821	2,787	2,214
55.00°	91	65	94
65.00°	31	33	36
75.00°	29	39	46
85.00°	136	106	83

UGR CIE 190:2010

Ceiling reflectance		0.7	0.7	0.5	0.5	0.3	0.7	0.7	0.5	0.5	0.3
Wall reflectance		0.5	0.3	0.5	0.3	0.3	0.5	0.3	0.5	0.3	0.3
Plane reflectance		0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Room dimensions		Viewed crosswise					Viewed endwise				
2H	2H	-18.3	-17.4	-18.0	-17.1	-16.8	-18.1	-17.2	-17.8	-16.9	-16.6
	3H	-17.6	-16.8	-17.2	-16.4	-16.1	-17.3	-16.5	-16.9	-16.1	-15.8
	4H	-17.3	-16.6	-16.9	-16.2	-15.8	-16.8	-16.1	-16.4	-15.7	-15.3
	6H	-16.6	-16.0	-16.2	-15.6	-15.2	-16.1	-15.4	-15.7	-15.0	-14.6
	8H	-15.9	-15.2	-15.4	-14.8	-14.4	-15.7	-15.0	-15.2	-14.6	-14.2
	12H	-14.8	-14.2	-14.4	-13.8	-13.4	-15.1	-14.5	-14.7	-14.1	-13.7
4H	2H	-18.3	-17.5	-17.8	-17.1	-16.8	-18.1	-17.3	-17.7	-17.0	-16.6
	3H	-17.3	-16.7	-16.8	-16.2	-15.8	-17.0	-16.4	-16.6	-16.0	-15.6
	4H	-16.9	-16.3	-16.4	-15.9	-15.5	-16.3	-15.8	-15.9	-15.4	-14.9
	6H	-15.8	-15.3	-15.3	-14.9	-14.4	-15.3	-14.8	-14.8	-14.4	-13.9
	8H	-14.8	-14.4	-14.3	-13.9	-13.4	-14.7	-14.2	-14.2	-13.8	-13.3
	12H	-13.5	-13.1	-13.0	-12.6	-12.1	-13.9	-13.6	-13.5	-13.1	-12.6
8H	4H	-16.6	-16.2	-16.1	-15.7	-15.3	-15.8	-15.3	-15.3	-14.9	-14.4
	6H	-15.1	-14.8	-14.6	-14.3	-13.8	-14.4	-14.1	-13.9	-13.6	-13.1
	8H	-13.9	-13.6	-13.3	-13.0	-12.5	-13.6	-13.3	-13.0	-12.8	-12.3
	12H	-12.2	-12.0	-11.7	-11.5	-10.9	-12.7	-12.4	-12.1	-11.9	-11.3
12H	4H	-16.5	-16.1	-16.0	-15.6	-15.1	-15.7	-15.3	-15.2	-14.9	-14.4
	6H	-14.9	-14.6	-14.3	-14.1	-13.5	-14.2	-13.9	-13.7	-13.5	-12.9
	8H	-13.5	-13.3	-13.0	-12.8	-12.2	-13.2	-13.0	-12.7	-12.5	-11.9

Corrected UGR values based on total output lumens

SHR = 1.0